vegetation at the northern facility fence line.

Acid gases and aerosols were selected for monitoring due to effects on property and people near the facility fence line. Some of those effects observed by DAQ staff included damage to trees along the fence line and physical sensations of burning eyes and nose.

A Zellweger Analytics chemical tape sampler was initially set up at the ADS Monitoring Site, for the purposes of performing "screening" monitoring for acid gases. On September 9, 2006, a Weekly Air Particulate Sampler designed for simultaneous particle and gas collection using Annular Denuder technology (or Annular Denuder System as they are referred to in this report (ADS))[1] was installed to provide the more precise sampling of gas and aerosol composition. The sites were also equipped with meteorological sensors.

In addition to acid gas and aerosol sampling, total suspended particulate (TSP) was selected for monitoring due, in part, to the presence of deposits of a rust colored material observed on nearby property, and reports of smoke or a "cloudy haze" compel the use of filter sampling. Staff observed that the rust colored deposits adhered to surfaces so thoroughly that obtaining appropriate samples of that material from deposits without contamination from the underlying material could be difficult to accomplish. Filter TSP concentrations are compared with the North Carolina Ambient Air Quality Standard (NCAAQS) for TSP[2]. If necessary, particulate matter composition could be determined by using other analytical methods.

The purpose of this study was to characterize the chemical composition of the air quality immediate to the complainants' properties through the identification and measurement of acidic gases, aerosols and particulates in their vicinity.

1.2.1 Monitoring Activities

The Quality Assurance Project Plan (QAPP) (See Appendix A) was developed based on discussions with MRO, TPB field observations, and research on air emissions from galvanizing processes. TPB monitoring practices for urbanized areas and the capacity and capabilities of TPB were also considered.

[1] The technology was designed to meet USEPA Compendium Method IP-9 and Compendium Method IO-4.2, *Determination of Atmospheric Fine Particles and Gases in Ambient Air Using Annular Denuder Technology*.
[2] North Carolina Administrative Code 15A 2D.0403